

What is claimed is:

1. A method of fabricating interconnection members for a microelectronic device, the method comprising:

providing a support substrate having a first surface;

coupling a conductive sheet having a uniform thickness to the first surface of the support structure; and

selectively removing portions of the conductive sheet thereby producing a plurality of substantially rigid, coplanar posts.

2. The method as claimed in claim 1, wherein the support substrate is a flexible dielectric substrate.

3. The ^{method} ~~component~~ as claimed in claim 2, wherein each post has at least one edge extending along the post in its direction of elongation.

4. The component as claimed in claim 2, wherein the posts have a cooling tower shape.

5. The ^{method} ~~component~~ as claimed in claim 4, wherein each post has at least one edge extending along the post in its direction of elongation.

6. The method as claimed in claim 2, wherein the conductive sheet is selected from the group consisting of copper, brass, and bronze.

7. The method as claimed in claim 6, wherein the conductive sheet has a thickness between 125 and 500 microns.

8. The method as claimed in claim 7, further comprising plating a highly conductive layer to the exposed surface of each of the posts.

9. The method as claimed in claim 1, wherein the step of selectively removing comprises:

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providing etch-resistant portions to a second surface of the
conductive sheet remote from the dielectric substrate; and

etching the conductive sheet, the etch-resistant portions being
substantially unaffected by the etching process.

5 10. The method as claimed in claim 9, wherein the providing etch
resistant portions step includes:

applying a photo resist layer to the conductive sheet;

selectively developing the photoresist layer to form etch resistant
portions and remaining portions; and

10 removing remaining portions of the photoresist layer.

11. The method as claimed in claim 1, further comprising:

providing a microelectronic device having a plurality of bond pads on
a first surface above a second surface of the dielectric sheet remote from the posts;
and

15 electrically connecting each bond pad to one post.

12. The method as claimed in claim 11, further comprising
disposing a compliant layer between the second surface of the dielectric sheet and
the first surface of the microelectronic device.

13. The method as claimed in claim 12, further comprising
20 soldering an apex portion of each post to a contact on a printed circuit board.

14. The method as claimed in claim 12, further comprising
disposing each post within and in electrical contact with a respective socket on a
printed circuit board.

25 15. The method as claimed in claim 11, wherein the step of
electrically connecting including:

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providing a plurality of conductive vias extending from the first to the second surface of the dielectric substrate, each via positioned beneath and in electrical contact with one post;

connecting each bond pad to a respective post through a respective
5 conductive via.

16. The method as claimed in claim 15, wherein the connecting step includes providing brazing buttons each extending from one via and coupling each brazing button to a bond pad on a chip.

proposed
10 17. The method as claimed in claim 16, further comprising the step of removing the support substrate after the brazing buttons have been attached to the bonding pads.

18. The method as claimed in claim 9, wherein the etch resistant portions include metallic portions.

15 19. The method as claimed in claim 18, wherein the metallic portions are comprised of nickel.

20. The method as claimed in claim 19, further comprising the step of coupling a highly conductive layer to each of the metallic portions.

21. A connection component, comprising:
a support substrate having a first surface;
20 a plurality of substantially rigid, elongated posts protruding parallel to one another from the first surface of the support substrate, each post having a base surface and a top surface, wherein each base surface is disposed adjacent the substrate, the top surfaces being remote from the substrate and substantially coplanar with respect to one another, the base surface of each post further having a
25 greater width than the top surface thereof.

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22. The component as claimed in claim 21, wherein the support substrate includes a flexible dielectric substrate.

23. The component as claimed in claim 21, wherein the posts have a cooling tower shape.

5 24. The component as claimed in claim 21, wherein each post has at least one edge extending along the post in its direction of elongation.

25. The apparatus as claimed in claim 21, wherein the posts have a collective height between 125 and 150 microns.

10 26. The component as claimed in claim 21, wherein a highly conductive layer is plated to the exposed surface of each of the posts.

27. The component as claimed in claim 21, further comprising:
a microelectronic device having a plurality of bond pads on a first surface, wherein the device is disposed above a second surface of the support substrate remote from the posts; and

15 means for electrically coupling each bond pad to at least one post.

28 The component as claimed in claim 27, further comprising a compliant layer disposed between the second surface of the dielectric sheet and the first surface of the microelectronic device.

20 29. The component as claimed in claim 27, further comprising:
the support substrate further having a plurality of conductive vias extending from the first to the second surface of the support structure beneath and in electrical connection with each of the posts, wherein the for electrically coupling includes connecting each bond pad to one post through one respective via.

25 30. The component as claimed in claim 21, further comprising a metallic member overlying the top surface of each post,

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31. The component as claimed in claim 30, wherein each metallic member has a greater width than the width of the top surface of its respective post.

32. The component as claimed in claim 31, wherein a highly conductive layer is coupled to each of the metallic members.

5 33. A method of electrically connecting a microelectronic component having a first surface bearing a plurality of contacts comprising the steps of:

forming a subassembly by juxtaposing a connection component having a support structure and a plurality of elongated posts extending substantially parallel to one another from a first surface of the support structure with the
10 microelectronic component so that the support structure overlies the first surface of the component with the posts extending away from the component, and electrically connecting the posts to the contacts of the microelectronic component; and

engaging the subassembly with a connector including a plurality of
15 electrically conductive sockets each having an internal opening so that each post extends into the internal opening of one socket and each post is mechanically engaged with such socket.

34. The method as claimed in claim 33, wherein each post has one or more edges extending along the post in its direction of elongation and
20 wherein each post engages the mating socket at such edges.

35. The method as claimed in claim 34, wherein each socket is a via having a conductive lining substantially in the form of a surface of revolution about an axis, each post extending substantially parallel to the axis of the engaged via lining, each post distorting the engaged via lining.

25 36. The method as claimed in claim 33, wherein each post has a surface flaring outwardly, transversely to the direction of elongation of the post

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adjacent the support structure, the outwardly-tapering surfaces of the post engaging the sockets.

37. The method as claimed in claim 33, wherein the support structure includes a flexible sheet, the posts being attached to the flexible sheet, the
5 step of forming a subassembly being conducted so that the posts can be moved relative to one another by flexure of the sheet.

38. The method as claimed in claim 37, wherein the step of forming a subassembly includes the step of providing a compliant material between the flexible sheet and the front surface of the microelectronic component.

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